NON-AQUEOUS ELECTROLYTE SECONDARY BATTERY

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EC Classification:

Equivalents:

Abstract

PROBLEM TO BE SOLVED: To provide a battery, of which capacitance is hard to be lowered and which has excellent charging and discharging cycle characteristics, by adhering the carbon material with the layered crystal structure to a collector, which is formed of a magnet, so as to form a negative electrode, and inserting a specified transition metal into a clearance between layers of the carbon material.
SOLUTION: Potassium is inserted into a clearance between layers of natural graphite by the gas phase reaction, and the natural graphite, in which the potassium is inserted, at 100 atom parts, chloride of transition metal at 0.1 atom parts of transition metal conversion, and di-metylcarbonate as a solvent are mixed so that the potassium is replaced with the transition metal. Thereafter, this natural graphite is heated at 500 deg.C in the vacuum condition. Continuously, this natural graphite at 95wt. parts and 5wt.%-N-methyl-2-pyrolydone solution of polyvinylidene fluoride of 5 pts.wt. to are kneaded so as to adjust the slurry. Both surfaces of a negative electrode collector are coated with this slurry, and heated at 150 deg.C for two hours in the vacuum condition so as to obtain a negative electrode.

Bibliographic Information

New method to improve the electrochemical properties of hydrogen storage electrode alloy. Ma, Jianxin; Pan, Hongge; Zhu, Yunfeng; Li, Shouquan; Chen, Changpin. Department of Materials Science and Engineering, Zhejiang University, Hangzhou, Peop. Rep. China. Jinshu Xuebao (2001), 37(1), 57-60. CODEN: CHSPA4 ISSN: 0412-1961. Journal written in Chinese. CAN 134:240100 AN 2001:154273 CAPLUS (Copyright 2002 ACS)

Abstract

A magnetization treatment was proposed to improve the electrochem. properties of hydrogen storage electrode alloy in this paper. The results indicate that through the magnetization treatment, the electrochem. properties of hydrogen storage permanent magnet electrode alloy La0.9Sm0.1Ni5.0-yCoy (y = 2.0, 2.5, 3.0), including electrochem. capacity, cycle life, and the high-rate discharge-ability, can be improved to some extent. The effect of magnetization treatment on its electrochem. properties is related to the content of Co. The higher the cobalt content is, the higher is the magnetization effect.

Bibliographic Information

Magnetic properties of powders, and their electrochemical activity. Markarov, V. I.; Mel'nikov, V. A.; Galat, N. I.; Kukoz, F. I. USSR. Tr. Novocherkassk. Politekh. Inst. (1970), 208 100-3. CODEN: TNPIAR Journal written in Russian. CAN 79:99711 AN 1973:499711 CAPLUS

Abstract

The magnetic properties of active Fe material for electrodes of Fe-Ni storage batteries were studied, as well as the interrelation of these properties with their electrochem. activity. The effective magnetic susceptibility, the coercive force, and residual magnetization were detd. and compared to electrochem. parameters. The effective magnetic susceptibility was detd. according to previously given data (F. I. Kukoz, et al., 1966). The magnetic remanence and coercive force were also detd. The high values of magnetic properties corresponded to the high quality of the active material and, thereby, to a high electrochem. activity. The relation between the magnetic and electrochem. properties of the materials permit one to det. the quality of active Fe materials on the basis of magnetic property detns.

Bibliographic Information

Effect of a magnetic field on the emf. of a Ni-MH secondary battery. Yamaguchi, Masahiro; Yamamoto, Tsutomu; Sugaya, Fumitaka; Bartashevich, M. I.; Goto, Tsuneakira; Miura, Narito. Fac. Eng., Yokohama Natl. Univ., Japan. Tohoku Daigaku Kinzoku Zairyo Kenkyusho Kyojiba Chodendo Zairyo Kenkyu Senta Nenji Hokoku (1992), Volume Date 1991, 329-33. CODEN: TDKKEA Journal written in Japanese. CAN 123:61267 AN 1995:598535 CAPLUS

Abstract

A Ni-MH secondary battery consists of a Ni cathode and metal hydride (MH) anode. The H equil. pressure is affected by static magnetic field (conversion of static magnetic energy to emf). At 15T, 0.43 mV equil. potential was attained.